

the sun-spot theory suggested by him. This latter theory recent solar work would seem to support.

While a transference of luminescence might be held as sufficient to account for the direct observations of apparently high velocities in prominences, it would not adequately account for the actual line displacements observed, which are so consistently dealt with by Doppler's principle. It is difficult to see why even a velocity of 300 miles per second in the outer regions of the solar atmosphere is held to be impossible. At the lower levels of the photosphere and reversing layer such enormous velocities are hardly to be expected, though even here the invariability of the spectrum is more apparent than real. Larger solar images and greater dispersion show local movements of the solar lines unobserved under less favourable conditions.

The independent rotation of some of the outermost solar layers is not vital to any theory, and indeed the outermost considered has the *highest* velocity apart from the lack of polar retardation. The existence of extensive magnetic fields in the sun due to the rotation of ions indicates velocities in excess of that which the author's theory would allow. The theory, however, seems a flexible one, and may provide even for these observations. The essay should be found both interesting and suggestive, though it can hardly carry conviction.

For his painstaking compilation of evidence, for his careful discussion of it, and for his daring unorthodoxy and consistency, the author deserves full credit. In the region of solar theory, during this age of sub-atomic physics, many of the grosser explanations and less subtle analogies, hitherto sufficient, may have to pass. The necessity for an alert and open mind is especially great.

THE INTERNATIONAL CONGRESS OF CHEMISTRY.

THE seventh International Congress of Chemistry will be held in London at the end of May. The congress meets every third year, the last meeting having been in Rome, and the one previous in Berlin. This is the first time that the congress, which is under the patronage of the King and the Prince of Wales, has been held in this country. Some two years ago an organising committee was formed of delegates from twenty societies which have interests in connection with chemistry, and also from the Chambers of Commerce of London and Manchester.

There are very few of the important industries which are not directly or indirectly indebted to technical chemistry for their development and success. Continental nations have long recognised this, and the congresses which have been held in the various cities of Europe have been well attended. It has been felt, also, that the holding of the congresses has materially contributed to the progress of the various countries by bringing the heads of the firms into personal contact with scientific men from all parts of the world.

The congress covers the whole domain of chemistry, and is divided up into eleven sections:—(1) analytical chemistry, (2) inorganic chemistry and allied industries, (3) metallurgy and mining, (4) organic products, (4a) colouring substances and their uses, (5) industry and chemistry of sugar, (6) starch industry, (6a) fermentation, (7) agricultural chemistry, (8) medical chemistry, (8a) pharmaceutical chemistry, (8b) bromatology, (9) photochemistry, (10) electrochemistry and physical chemistry, (11) law, political economics, and legislation with reference to chemical industries.

British delegates who have attended these con-

gresses have always been well received and entertained in a most hospitable manner. It is hoped and expected that we in this country will not be behindhand in the welcome which will be extended to our foreign *confrères*.

The congress will be opened at the Albert Hall, and the business part of the proceedings will be held in the buildings of the University of London the Imperial Institute, and the Imperial College of Science and Technology at South Kensington. The chief aim of the congress is the advancement of scientific knowledge, but beside this, arrangements are being made for various gatherings of a social nature, such as a banquet at the Crystal Palace, a *conversazione* at the Natural History Museum, and a visit to Windsor Castle by special permission of the King.

In view of the fact that more than 3000 visitors are expected to attend the congress, and that it will last a whole week, the expenses will necessarily be heavy. Substantial sums have already been received, but in order that we may in no way be behind other nations in our hospitality, the committee has appealed for further help.

THE HUTTON MEMORIAL MEDAL AND RESEARCH FUND.

SHORTLY after the death of the late Captain F. W. Hutton in 1905, steps were taken by the Philosophical Institute of Canterbury to establish a research fund as a memorial of his many services to New Zealand science. The New Zealand Government recognised the value of Captain Hutton's work by



subsidising the fund to the amount of 300*l.*, and a total sum of about 660*l.* was ultimately handed over to the New Zealand Institute.

Of this amount, 100*l.* was set aside for the expenses of striking a bronze medal to be known as the Hutton memorial medal. This medal, a photograph of which is here reproduced, has been designed by Prof. Lanteri, and bears an excellent portrait of the late Captain Hutton, and on the obverse a design emblematical of the fauna and flora of New Zealand, viz. a tuatara (*Sphenodon punctatus*, Gray), prominent in the foreground; a kiwi (*Apteryx*); a cabbage tree (*Cordyline australis*); New Zealand flax bush (*Phormium tenax*), and other New Zealand plants,

while geology is represented by a geological hammer on some rocks in the foreground, and by a volcano in the distance.

The medal is to be awarded from time to time to persons who have made some notable contribution in connection with the zoology, botany, and geology of New Zealand; save in exceptional circumstances it is not to be awarded oftener than once in three years, and the recipient must have received the greater part of his education in New Zealand, or have resided in New Zealand for not less than ten years.

The remainder of the fund has been invested, and the interest on it may be used by the institute for making grants to persons who require assistance in connection with researches in New Zealand's natural history.

Communications with regard to the fund may be addressed to the secretary of the New Zealand Institute, Wellington, or to Dr. Chas. Chilton, Canterbury College, who acted as hon. treasurer until the fund was handed over to the institute.

W. H. HUDLESTON, F.R.S.

WE have to deplore the death, in his eighty-first year, of Wilfrid Hudleston Hudleston, one of the most distinguished of British geologists, whose combined knowledge of the main branches of the science, palæontological, stratigraphical, petrological and chemical, was unsurpassed.

Born at York, on June 2, 1828, he was the son of Dr. John Simpson, of Knaresborough (who married Elizabeth Ward, heiress of the Hudlestons of Cumberland), and he assumed the name of Hudleston, by letters patent, in 1867.

After receiving education in schools at York and Uppingham, he entered St. John's College, Cambridge, and graduated B.A. in 1850. His attention was directed to geology during his last term at college, when he was present at a course of Sedgwick's lectures, but some years elapsed before his interest was concentrated on that subject. The study of law had engrossed much of his time, and he was called to the Bar in 1853, but never practised.

Possessed of independent means, he spent the earlier years of manhood in travel in various parts of Europe and northern Africa. He was ever a keen sportsman, and the subject of ornithology attracted him, probably through his friendship with the late Alfred Newton, whom he accompanied on a visit to Lapland. Thus it was that he became one of the founders of the British Ornithologists' Union; and on December 9 of last year he attended a special meeting, held in the rooms of the Zoological Society, to celebrate the jubilee of the Union, when a gold medal was presented to him in honour of the occasion.

At the age of thirty-four, Mr. Hudleston decided to qualify himself for research work in natural science by courses of instruction which he undertook at Edinburgh, and afterwards at the Royal College of Chemistry in London. His ultimate career was determined in 1866, when he was introduced to John Morris, professor of geology in University College, London. An absorbing interest in geology was aroused by that enthusiastic and gifted teacher, and Mr. Hudleston became a Fellow of the Geological Society in 1867, and joined the Geologists' Association in 1871. To the latter body he gave energetic service for a number of years, being chosen honorary secretary in 1874, and president in 1881; and he conducted a number of notable excursions, his reports on which contain much original information.

The list of his geological publications commences in 1872, and among the more important are a series

of papers on the Yorkshire Oolites, and others on the Gasteropoda of the Oolites, published in the *Proceedings of the Geologists' Association* and in the *Geological Magazine*.

In 1877, in conjunction with the late J. F. Blake, he communicated to the Geological Society a memoir on "The Corallian Rocks of England," giving full particulars of these fossiliferous strata from Dorset to Yorkshire. It is sufficient to say that this paper is to be regarded as one of the geological classics.

In 1892, with the cooperation of the late Edward Wilson, he published "A Catalogue of British Jurassic Gasteropoda," a work embodying all the critical knowledge of the writers. His chief work, one on which he was engaged for more than twenty years, was his "Monograph on the Gasteropoda of the Inferior Oolite," published by the Palæontographical Society (1887-1896).

Mr. Hudleston, who served for several years as secretary of the Geological Society, was elected president in 1892; and he was awarded the Wollaston medal in 1897, soon after the completion of his great work on the Gasteropoda.

Apart from his detailed investigations, Mr. Hudleston was the author of numerous essays, which afford abundant evidence of his shrewd criticism and sound judgment, with not a little dry humour. Among these articles may be mentioned those on the geology of Palestine, on the Tanganyika problem, on the eastern margin of the North Atlantic Basin, on Indian geology, and on the geological history of iron ores.

Mr. Hudleston was elected a Fellow of the Royal Society in 1884. He was one of the founders of the Malacological Society, was president of Section C of the British Association at Bristol in 1898, and was president at times of several provincial natural history societies. In later years, when he acquired a country residence at West Holme, near Wareham, in Dorset, he took an active part in the proceedings of the Dorset Natural History Field Club. He investigated in detail the structure of Creechbarrow Hill, near Wareham, and only last year published an important paper on some well-sections in connection with the local water-supply. He died at his Dorset home on January 29. A biography of him, to which we are indebted for many of the above particulars, appeared in the *Geological Magazine* for September, 1904, accompanied by an excellent portrait and a list of publications.

H. B. W.

NOTES.

DR. HORACE T. BROWN, F.R.S., and Sir David Bruce, C.B., F.R.S., have been elected members of the Athenæum Club under the provisions of the rule which empowers the election of persons "of distinguished eminence in science, literature, the arts, or for public services."

WE learn from the *Pioneer Mail* that Sir T. H. Holland, F.R.S., director of the Geological Survey of India, may be expected to arrive in England on leave during the coming summer preparatory to retirement, as he proposes to accept the offer of the chair of geology at Manchester University vacated by Prof. Boyd Dawkins, F.R.S.

THE honorary secretaries of the meeting of the British Association to be held in Winnipeg from August 25 to September 1 of this year are Mr. C. N. Bell, Mr. W. Sanford Evans (Mayor), Prof. M. A. Parker, and Prof. Swale Vincent. The office of the secretaries has been organised in the University of Manitoba, Winnipeg, Canada.